

Treatment of lung hydatidosis by VATS: a preliminary report

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Hydatisidosis is a parasitic condition, an echinococcosis, endemic to regions including South America, Australia, the Mediterranean and the Balkans.¹ A pulmonary location is observed in 30%–40% of cases.² Increasing frequency of this parasitosis has been reported in many countries—worldwide, but especially in the endemic regions.³ In Bulgaria, its frequency per hundred thousand population has more than doubled from 3.3 in 1982 to 6.8 in 1995.¹

Surgical enucleation of the cyst is the classical treatment for hydatid lung disease. With the rapid progress of endoscopic surgery, surgeons now have a broader range of treatment options that are minimally invasive and which reduce postoperative trauma and morbidity.³

Case reports

The authors performed 11 echinococcectomies with video-assisted thoracic surgery (VATS) technique at our centre from 1998 through 2002, in patients who ranged from 17 to 55 years of age. Standard equipment and instruments for endothoracic surgery were used, although in 1 case an Ultrascision harmonic scalpel was used for lung resection. Bronchial fistulas were closed with tissue glue.

All patients had solitary lung cysts (7 of them affecting the right lung and 4 the left) with no clinical symptoms: they were diagnosed by accident at prophylactic x-ray examinations (Fig. 1). The cyst was confirmed with computed tomogra-

phy (CT) in 10 patients (Fig. 2), and by magnetic resonance imaging in the remaining patient. Abdominal ultrasound and CT scans were done to ensure the absence of additional cysts located elsewhere.

For echinococcectomy by VATS, cysts were required to be peripheral, superficial and <6 cm in diameter. Cysts not meeting these criteria were approached via thoracotomy and excluded from this study.

The operation was performed under general anesthesia. Patients were intubated in the lateral position with a double-lumen tube. Three trocars were usually inserted relative to the cyst's position, after which the pleural cavity and lung were examined with a camera. Once located, the cyst was punctured and the hydatid liquid aspirated; then a scolicecid (vermicidal) agent (NaCl 10% or Beta-

dine) was instilled. Next, the fibrous membrane was opened and the germinative membrane aspirated through a 10-mm cannula. After a second treatment with the scolicecid agent, the cavity was examined by camera for bronchial fistulas; those found were treated with 2 mL of tissue glue instilled through a silicone catheter. Inflating the lungs collapsed the cavity. The operation ended with the positioning of a tube drain in the sixth intercostal space, to be left in place for 72 hours.

This technique was used in all patients except 1 whose cyst was located very superficially. In this atypical case the lung parenchyma was resected, including the cyst.

Postoperative hospital stays averaged 5 days. Complications occurred in only a

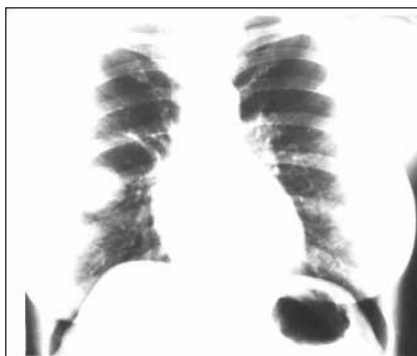


FIG. 1. Chest x-ray showing a peripheral right-sided hydatid cyst.



FIG. 2. Thoracic computed tomographic image of a left-sided hydatid cyst.

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single case, when pneumothorax from a large bronchial fistula developed in spite of the aspiration. On the fourth day after VATS, the fistula was approached and sutured through a minithoracotomy. The patient recovered without sequelae.

All patients took albendazole for 3 months after surgery, prescribed and overseen by a parasitologist. Follow-up CT images in the sixth month showed no evidence of cysts or other lung pathology.

Return visits by patients to their surgeon were irregular thereafter. Further radiographs and CT scans at various post-surgical intervals have shown no pathology to date.

Discussion

Treatment of pulmonary hydatidosis with VATS has advanced mainly in the last few years.^{3,4} At the beginning of the 1990s, endoscopic echinococectomy was considered contraindicated because of difficulties in bronchial fistula closure.⁵ Some authors, mainly from the countries with sporadic echinococcosis, have preferred more radical operations: segmentectomy and lobectomy.⁶ Others left the residual cavity open to the pleural cavity,⁷ or performed a pericystectomy (the Perez Fontana method). The most widely used approach in countries with endemic echinococcosis is liquidation of the residual cavity by capitonnage.^{8,9} Later, a few authors reported single cases or small

groups of patients who had undergone echinococectomy by VATS.^{3-5,10}

In our experience, the cysts most suitable to VATS are peripheral cysts up to 5 or 6 cm in diameter. In such cases, the bronchial fistulas are small and can be easily closed with tissue glue (Tissucol). We support the opinion of Becmeur and colleagues¹⁰ that cysts deep into lung parenchyma are unsuitable for VATS treatment.

Our series shows definitively that VATS can be considered a reliable option in the treatment of superficial, small-to-moderate lung hydatid cysts. It features less postoperative trauma and morbidity than classical procedures, with better esthetic consequences and a lower risk of postoperative complications.

Competing interests: None declared.

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